

Claim 1 is the only independent claim. In these rejections, the Examiner acknowledges that the primary references (Wunderman and Berends) fail to disclose:

1. a filter placed between a light source and a photosensor (detector) ("the First Limitation");
2. radiation is emitted uninterruptedly across essentially the entire visible spectrum ("the Second Limitation"); and
3. the intensity of a light source is controllable ("the Third Limitation").

To compensate for these deficiencies, the Examiner has cited Blalock for teaching the Second Limitation and the Third Limitation, but has apparently taken the position that the First Limitation would be inherently obvious without citing any teaching from any other reference.

Applicant respectfully submits that these assertions are incorrect, and involve impermissible hindsight reconstruction. More specifically, Applicant respectfully submits that Blalock cannot be properly combined with either Wunderman or Berends, and even if the combinations were proper, that the combinations would still not yield the device claimed in claim 1.

Blalock Does Not Disclose the Second Limitation

First, Blalock does not teach emitting radiation uninterruptedly across essentially the entire visible spectrum. In column 3, lines 62-66, Blalock teaches calibrating the intensity of a combination of red, green and blue LEDs to form white light. However, this generated white light is not natural white light (which contains all wavelengths across essentially the entire visible spectrum), but is instead artificial white light which does not contain radiation (it is radiation which is emitted uninterruptedly across essentially the entire visible spectrum). Thus, Blalock does not accurately teach the Second Limitation, so that combining Blalock with either Wunderman or Berends will still not yield all the limitations of claim 1.

It Would Not Be Obvious To Provide A Filter For Measuring Devices

Second, it is not correct to assume, without any express teaching from another reference, that it would be obvious to place a filter between a light source and a photosensor (detector). Although it is known in the art to provide filters for various applications, a filter would be counterproductive in the measuring devices of the present application. For measuring devices, it is desirable to emit a broad spectrum of light on the surface to be measured. In addition, the whole spectrum of reflected light or the fluorescence should be detected. Therefore, a filter would filter out the desired spectrum

of light and be counterproductive. For these reasons, a person skilled in the relevant art (measuring devices) would have no incentive to consider the use of filters.

However, Applicant discovered that that measuring results might be adversely affected by radiation above a relevant wavelength band, such as by radiation coming from parts of the human body. Applicant discovered that the photosensors might be sensitive to such radiation. Therefore, Applicant provides a filter to filter out the radiation above certain wavelength bands, while allowing radiation from other (desirable) wavelength bands to pass therethrough. In addition, positioning a filter in front of a sensor offers the further advantage that radiation at wavelength bands emitted spontaneously by the surface itself can be kept away from the photosensor. These aspects are discussed on page 47 of the amended version of the specification.

Blalock Is Non-Analogous Art And Cannot Be Properly Combined With Wunderman and Berends

Blalock describes a micro-display, which uses LEDs for its illumination (e.g., red, green and blue LEDs). Blalock is directed to calibrating the illumination sources (LEDs) for the micro-display, and does not evaluate reflected light, because the light emitted by the LEDs is merely used to illuminate the micro-display.

In contrast, the present invention is directed towards evaluating light that is reflected from a measuring surface so as to determine certain properties of the surface. However, Blalock is not related to this objective since the light emitted by the LEDs in Blalock is merely used to illuminate the micro-display, and is not evaluated to determine the properties of any surface. In fact, Blalock does not even disclose any surface that is to be evaluated since the photo detector 11a receives light directly from the LED 12a for use in calibration.

For the above reasons, a person skilled in the relevant art of the present invention would have no incentive to consider the teachings of Blalock in modifying Wunderman or Berends. Any suggestion or incentive to consider Blalock as being analogous prior art would necessarily be based on impermissible hindsight.

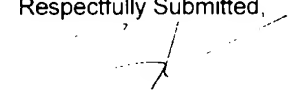
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Claims 2-8, 10-28 and 30-37 depend from claim 1, and are submitted to be allowable for the same reasons.

In addition, Applicant respectfully submits that claim 19 defines additional patentable subject matter. Claim 19, which depends from claim 1, recites a spectral means that is arranged in the path of radiation between the illuminating means and the photosensor, and which splits the incident radiation subject to wavelengths. The Examiner acknowledges that Wunderman and Berends (and presumably Blalock as well) do not disclose this limitation, but cites Rioux for disclosing this limitation. Again, this combination is improper because Rioux is non-analogous art. In this regard, Rioux relates to a color imaging system and does not disclose a measuring surface. Applicant submits that the use of two non-analogous (or whose relevance is questionable at best) references, Blalock and Rioux, as secondary references cannot be proper and must be the result of impermissible hindsight.

Thus, all pending claims are submitted to be in condition for allowance. The Examiner is encouraged to telephone the undersigned if there are informalities that can be resolved in a phone conversation, or if the Examiner has any ideas or suggestions for further advancing the prosecution of this case.

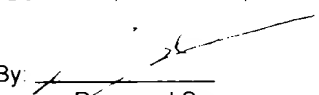
Respectfully Submitted,


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CERTIFICATE OF MAILING

I hereby certify that this paper and its enclosures are being deposited with the United States Postal service as First Class Mail in an envelope addressed to the Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450 on the date shown below.

Date: August 29, 2003 By: 
Raymond Sun